



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,792	03/24/2004	Yuichi Yagawa	16869B-080900US	6029
20350	7590	08/03/2006		
TOWNSEND AND TOWNSEND AND CREW, LLP TWO EMBARCADERO CENTER EIGHTH FLOOR SAN FRANCISCO, CA 94111-3834			EXAMINER SONG, JASMINE	
			ART UNIT 2188	PAPER NUMBER

DATE MAILED: 08/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/808,792	YAGAWA, YUICHI
	Examiner	Art Unit
	Jasmine Song	2188

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 24 March 2004 and 31 October 2005.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1,2,4,5,7-13,15,16 and 32-34 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) 13,15 and 16 is/are allowed.
 6) Claim(s) 1,9 and 32-34 is/are rejected.
 7) Claim(s) 2,4,5,7,8 and 10-12 is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 24 March 2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>03/24/04&01/23/06</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

In the specification, page 5, section 0026, please fill in the U.S. Patent Application No.

Drawings

2. The drawings filed on 03/24/2004 have been approved by the Examiner.

Oath/Declaration

3. The applicant's oath/declaration has been reviewed by the examiner and is found to conform to the requirements prescribed in 37 C.F.R. 1.63.

Information Disclosure Statement

4. The information disclosure statement (IDS) submitted on 03/24/2004 and 01/23/2006 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Objections

5. Claims 5 and 33-34 are objected to because of the following informalities:

In Claim 5, "The method of claim 3" should be changed to --The method of claim 4--.

(claim 3 has been canceled and the Examiner recognizes that Applicant is referring to the commands recited in claim 4, please see applicant's specification page 9 and the original claim dependence in US 2005/0216794 A1).

In claims 33 and 34, "The storage system according to claim 31" should be changed to --The storage system according to claim 32--.

(claim 31 has been canceled).

Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by

Debiez et al., US 6,615,330 B2.

Regarding claim 1, Debiez teaches that a method for operating a storage system configured to provide a Write Once and Read Many (WORM) function, the method comprising:

receiving a first command (it is taught as receiving a write command to write a data block on storage medium, and the write command is associated with a specified block number, col.4, lines 21-24) at a storage subsystem (it is taught as a storage medium 18) from a host (it is taught as host system 12 in the Fig.1); and

storing at least a portion of the first command on a WORM storage device (it is taught as the specific block number is stored at WORM module 14; col.4, lines 11-12) coupled to the storage subsystem (Fig.1),

wherein the WORM storage device is used to verify the WORM function of the storage system (it is taught as the module 14 is used to prevent future writing data to the specified block number; col.4, lines 15-20 and lines 34-37 and 45-50 and col.6, lines 3-4).

Regarding claim 9, Debiez teaches that at least portions of all commands are stored in the WORM device (it is taught as all block numbers are stored in the WORM module, col.4, lines 32-34).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ofek et al., US 6,185,661 B1, in view of McGovern et al., US 2005/0097260 A1.

Regarding claim 32, Ofek teaches a storage system coupled to a host computer, the storage system comprising:

a storage controller (controller 15, col.3, lines 58-59) that conducts an I/O operation from the host computer (col.3, lines 64-67 and col.5, lines 28-35); and a plurality of storage areas (it is taught as logical volume 25A, 25B and 25C) defined by at least one disk drive (it is taught as the logical volumes 25A, 25B and 25C are identified in the physical disk 25 as a WORM volume or not be designated to be a WORM volume; col.4, lines 60-66);

wherein the storage controller collects log information of the I/O operation (it is taught as the information from the corresponding one of the WORM volume bit maps, col.5, lines 44-46) for at least one of the plurality of storage areas (it is taught as logical volume 25 A) when the at least one storage area is defined as a WORM area (it is taught as the logical volume is determined to be WORM volume, col.5, lines 37-39 and lines 42-43).

Ofek does not teach that the log information of the I/O operation is stored into a WORM storage device, but Ofek teaches that the WORM volume bit map located separately from the WORM area (the WORM volume bit map 41 located separately from the disk such as disk 25, volume 25 A is the WORM area; Fig.1).

However, McGovern teaches that the log information of the I/O operation is stored into a WORM storage device (it is taught as a log file, also is considered as records are stored in the WORM data structure; section 0106, last four lines and col.15, right side, claims 37 to claims 39).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of McGovern into Ofek's system such as storing the log information of the I/O operation into a WORM storage device because a log of WORM activity facilitates data integrity and maintenance and audit of data access, e.g., for law enforcement or internal security purposes (see McGovern, section 0107, last six lines).

Accordingly, one of ordinary skill in the art would have recognized this and concluded that they are from the same field of endeavor (both references teach WORM storage device). This would have motivated one of ordinary skill in the art to implement the above combination for the advantages set forth above.

Regarding claim 33, Ofek teaches the plurality of storage areas are a plurality of logical units (it is taught as 25A, 25B and 25C are logical volumes, Fig.1).

Regarding claim 34, Ofek teaches the log information the I/O operation includes at least a command relating to WRITE operation (col.5, lines 36-51).

Allowable Subject Matter

10. Claims 13,15-16 are allowed.
11. Claims 2,4-5,7-8 and 10-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The limitation can not find in the prior art include associating a serial number to each of the commands, the serial number being useful for sorting the commands in a given order, wherein the WORM storage device includes a plurality of command records, the command records including the at least portions of the commands and the serial number and wherein the command records are useful for verifying whether or not a storage subsystem has maintained a WORM integrity as claimed in the independent claim 13. Claims 15-16 respectively allowable as dependent on independent claim 13 and incorporated additional allowable feature therein.

The prior art of record does not teach or suggest that receiving a second command and examining the second command using a command filter, the filter being provided with a predetermined rule for filtering selected types of commands and storing at least a portion of the second command if the second command satisfies the predetermined rule as claimed in claim 2 in combination with the other elements set forth in the claimed invention. Claims 4-5 and 7-8 respectively allowable as dependent on claim 2 and incorporated additional allowable feature therein.

The prior art of record does not teach or suggest that associating a serial number to the first command and storing the serial number in the WORM storage device as

claimed in claim 10 in combination with the other elements set forth in the claimed invention. Claims 11-12 respectively allowable as dependent on claim 10 and incorporated additional allowable feature therein.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Shoup	US 2002/0147734 A1
Greco et al	US 2004/0168023 A1
McGovern et al	US 2004/0186858 A1

13. When responding to the office action, Applicant is advised to clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. He or she must also show how the amendments avoid such references or objections. See 37 C.F.R. 1.111 (c).

14. When responding to the office action, Applicants are advised to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist examiner to locate the appropriate paragraphs.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jasmine Song whose telephone number is 571-272-4213. The examiner can normally be reached on 7:30-5:30 (first Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on 571-272-4210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jasmine Song
Patent Examiner

July 10, 2006